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(54) Display with replaceable stand

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body (1) selectively supported by the second stand (5) while the first stand (4) is connected to the second stand (5) or merely by the main body (1), wherein the first stand (4) is hinged on the main body (1).

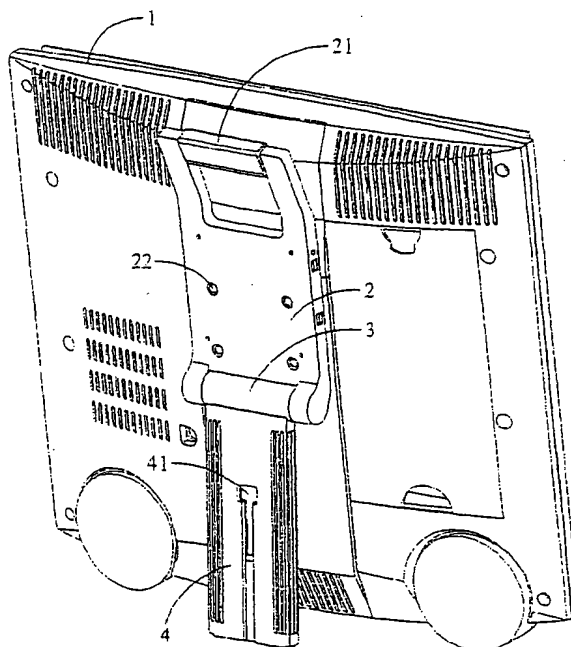


FIG. 2

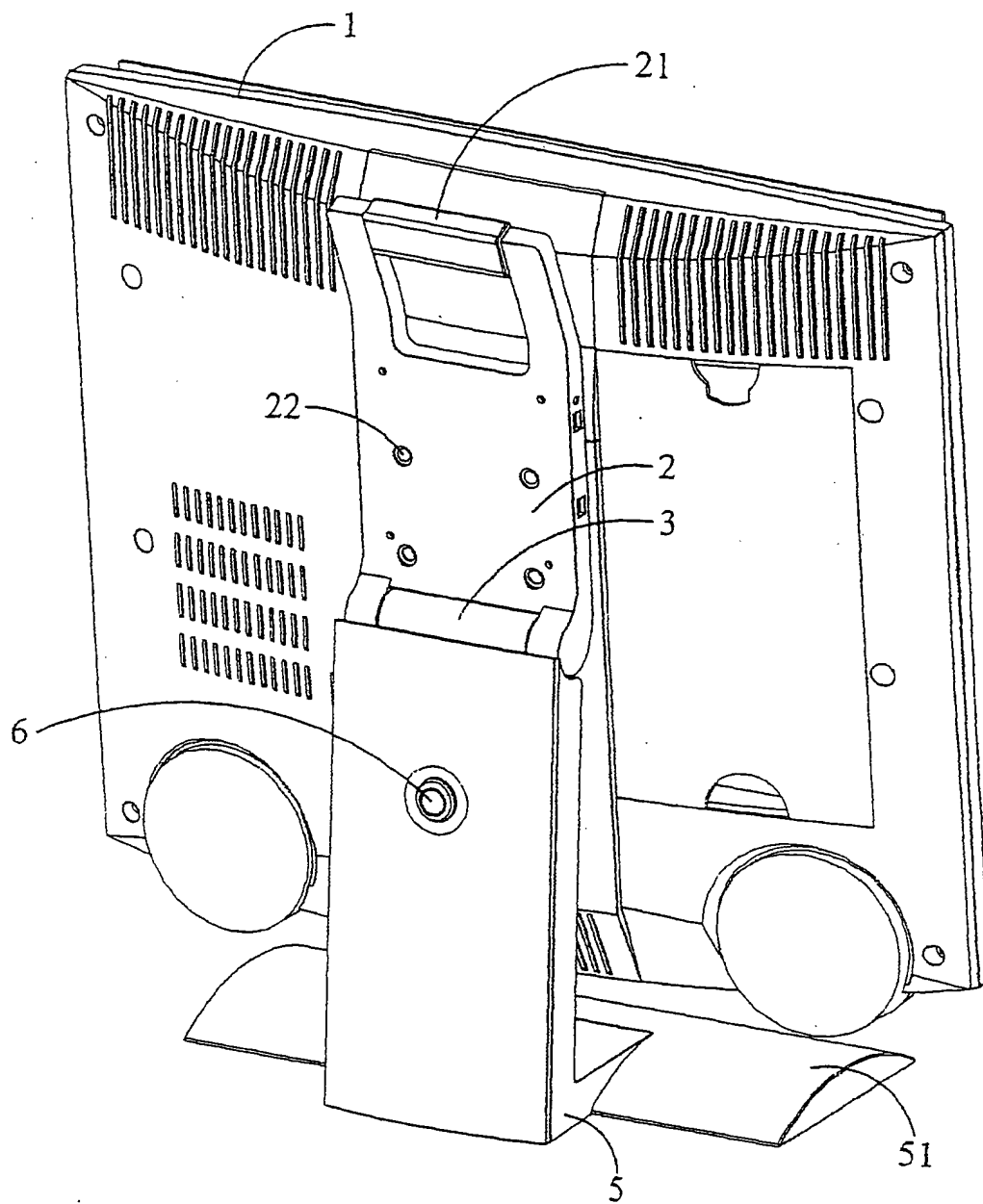


FIG. 3

Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The invention relates to a display, and more particularly to a display with replaceable stand.

Description of the Related Art

[0002] As display technology progresses, displays have become compacter and lighter. Therefore, the flat display has replaced the traditional cathode ray tube (CRT) in recent years. Since the flat display weighs less and emits less radiation, it has become a very important electronic product.

[0003] As the advantages mentioned above, the flat display can be carried and used in many different places. In order to expand the utility of the flat display in variable environments, a flexible base stand is necessary.

[0004] The traditional base stand for the flat display usually has a pedestal with a flat bottom to sustain the whole body. However, the flat display with traditional base can only be put on an even surface. Moreover, for providing a stable support, the traditional base stand is usually heavy and not portable.

SUMMARY OF THE INVENTION

[0005] An object of the present invention is to provide a flat display with replaceable stand. The flat display comprises a first stand, a second stand detachably connected to the first stand, and a main body selectively supported by the second stand while the first stand is connected to the second stand or merely by the main body, wherein the first stand is hinged on the main body. Users can selectively position the flat display using the base stand or the simple stand in different environments.

[0006] Particularly, when placed for a long period of time or on an even surface, the flat display of the present invention can use the base stand for a stable support. Additionally, the flat display of the present invention also can be placed using the simple stand if it needs frequent moving or placement on an uneven surface. Furthermore, a handle is disposed on the flat display so that users can carry and move the flat display more easily.

DESCRIPTION OF THE DRAWINGS

[0007] For a better understanding of the present invention, reference is made to a detailed description to be read in conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective diagram in front view of a flat display in accordance with the present inven-

tion;

FIG. 2 is a perspective diagram in back view of a flat display using the simple base stand in accordance with the present invention;

FIG. 3 is a perspective diagram in back view of a flat display using the base stand in accordance with the present invention;

FIG. 4 is an exploded diagram of the base stand in accordance with the present invention;

FIG. 5 is a perspective diagram without combining the base stand with the simple stand;

FIG. 6 is a perspective diagram after combining the base stand with the simple stand;

FIG. 7 is a lateral view of a flat display with the main body and the simple stand at a small angle;

FIG. 8 is a lateral view of a flat display with the main body and the simple stand at a large angle.

DETAILED DESCRIPTION OF THE INVENTION

[0008] As shown in FIG. 1, the flat display of the present invention comprises a main body 1 connected with a handle 21 so that users can lift the flat display easily.

[0009] In FIG. 2, moreover, the flat display comprises a carrying portion 2 with the handle 21 and a plurality of screw holes 22 therein. The carrying portion 2 and the main body 1 are joined by the screws (not shown) in the screw holes 22. The simple stand 4 is connected to the carrying portion 2 with a hinge 3. Furthermore, the simple stand 4 can rotate within a specified range of angle along the hinge 3 with the simple stand 4 and the main body 1 at a small angle (as shown in FIG. 7) or at a large angle (as shown in FIG. 8).

[0010] Additionally, instead of connecting to the carrying portion 2, the simple stand 4 can also connect to the main body 1 by a hinge directly.

[0011] In FIG. 3, the flat display is supported by the base stand 5 connected to the simple stand 4. The base stand 5 is hollow to house the simple stand 4 when the simple stand 4 and the base stand 5 are connected. Moreover, The base stand 5 comprises a pedestal 51 with a flat bottom surface so that the base stand 5 can provide a stable support.

[0012] In FIG. 4 and FIG. 5, a pair of parallel guide rails 52 and an engaging portion 53 are disposed inside the base stand 5. When connecting the simple stand 4 and the base stand 5, the simple stand 4 is inserted along the guide rails 52 until contacting a spring 54 disposed in the bottom of the groove 52. With continuing pushing of the simple stand 4 downward, the reverse spring force against the simple stand 4 increases, and the simple stand 4 and the base stand 5 are tightly combined while the engaging portion 53 joins into the hole 41 of the simple stand 4.

[0013] Since the engaging portion 53 has a spring (not shown) inside, when the hole 41 moves to the position of the engaging portion 53, the engaging portion 53

spontaneously joins into the hole 41 by spring force. Thus, the simple stand 4 and the base stand 5 are connected.

[0014] Furthermore, users can separate the base stand 5 from the simple stand 4 by pushing a button 56. In FIG. 4, the button 56 is disposed in the back of the base stand 5. A protrusion 561 connected to the button 56 passes through a hole 551 of a cover 55 and contacts with the engaging portion 53. When pushing the button 56, the spring inside the engaging portion 53 is compressed, and the engaging portion 53 is separated from the hole 41. Thus, users can easily pull the handle 21 up so that the base stand 5 is separated from the simple stand 4.

[0015] Before connecting the base stand 5 and the simple stand 4, as shown in FIG. 5, the simple stand 4 has to be inserted into the hollow base stand 5 from top to bottom. In FIG. 6, after inserting the simple stand 4, the hole 41 and the engaging portion 53 are joined so that the simple stand 4 is housed and connected inside the base stand 5.

[0016] The present invention provides a flat display with a replaceable base stand to easily combine and separate the base stand 5 and the simple stand 4. The advantage of the present invention is that users can selectively position the flat display using the base stand 5 or the simple stand 4 in different environments.

[0017] While the invention has been described by way of example and in terms of the preferred embodiments, it is to be understood that the invention is not limited to the disclosed embodiments. To the contrary, it is intended to cover various modifications and similar arrangements (as would be apparent to those skilled in the art). Therefore, the scope of the appended claims should be accorded the broadest interpretation so as to encompass all such modifications and similar arrangements.

Claims

1. A flat display, comprising:
 - a first stand;
 - a second stand detachably connected to the first stand; and
 - a main body selectively supported by the second stand while the first stand is connected to the second stand or merely by the first stand.
2. The flat display as claimed in claim 1, wherein the first stand is hinged on the main body.
3. The flat display as claimed in claim 1, wherein the second stand has a flat bottom surface to stabilize the main body when the main body is supported by the second stand.
4. The flat display as claimed in claim 1, wherein the

second stand is hollow to house the first stand when the first and second stands are connected.

5. The flat display as claimed in claim 4, wherein the second stand includes a rail inside for guiding insertion of the first stand into the second stand.
6. The flat display as claimed in claim 4, further comprising a spring disposed in the second stand to push against the first stand when the first stand is housed in the second stand.
7. The flat display as claimed in claim 4, wherein the first stand defines a hole, and the second stand includes an engaging portion fit into the hole when the first and second stands are connected.
8. The flat display as claimed in claim 7, wherein the second stand further includes a button to release the engaging portion from the hole when the second stand is detached from the first stand.

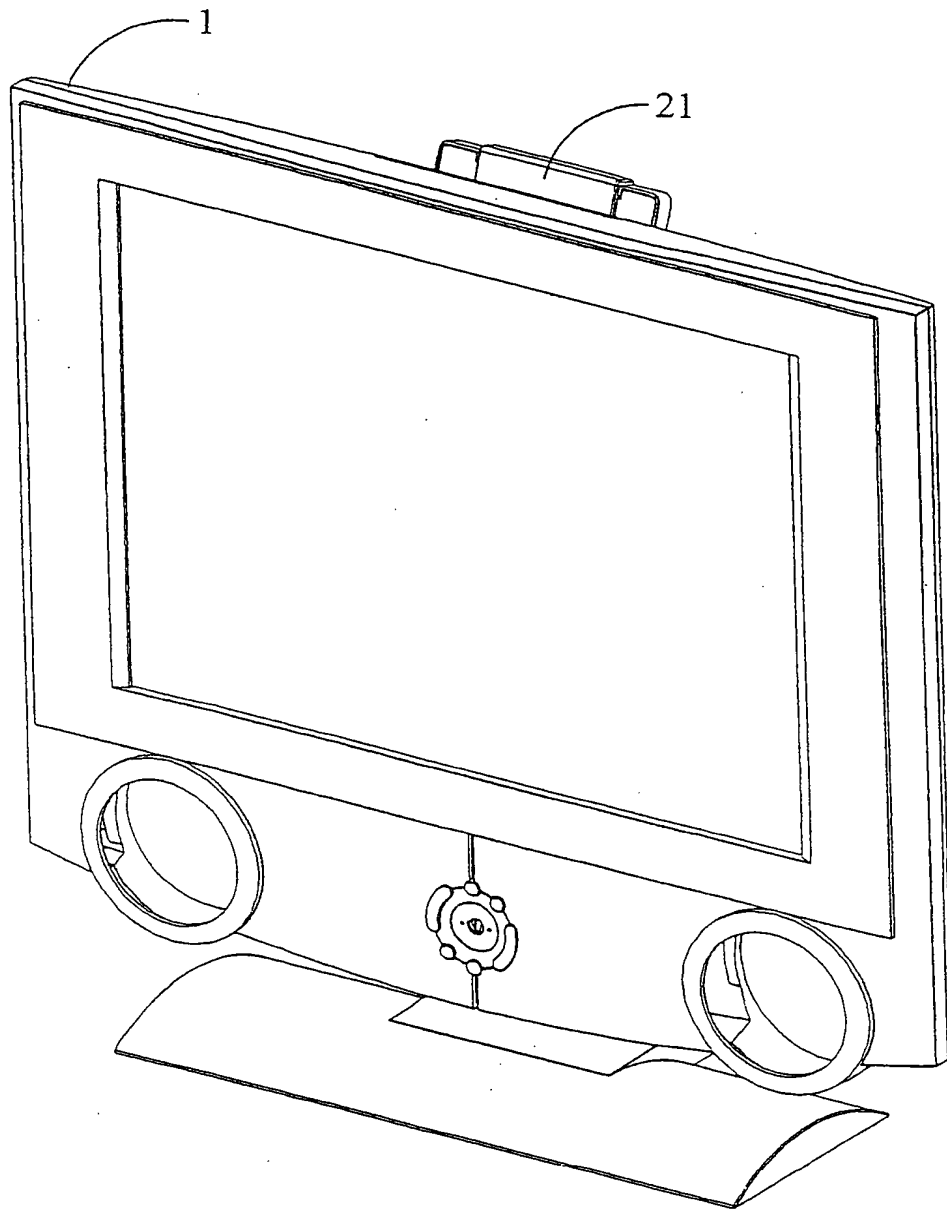


FIG. 1

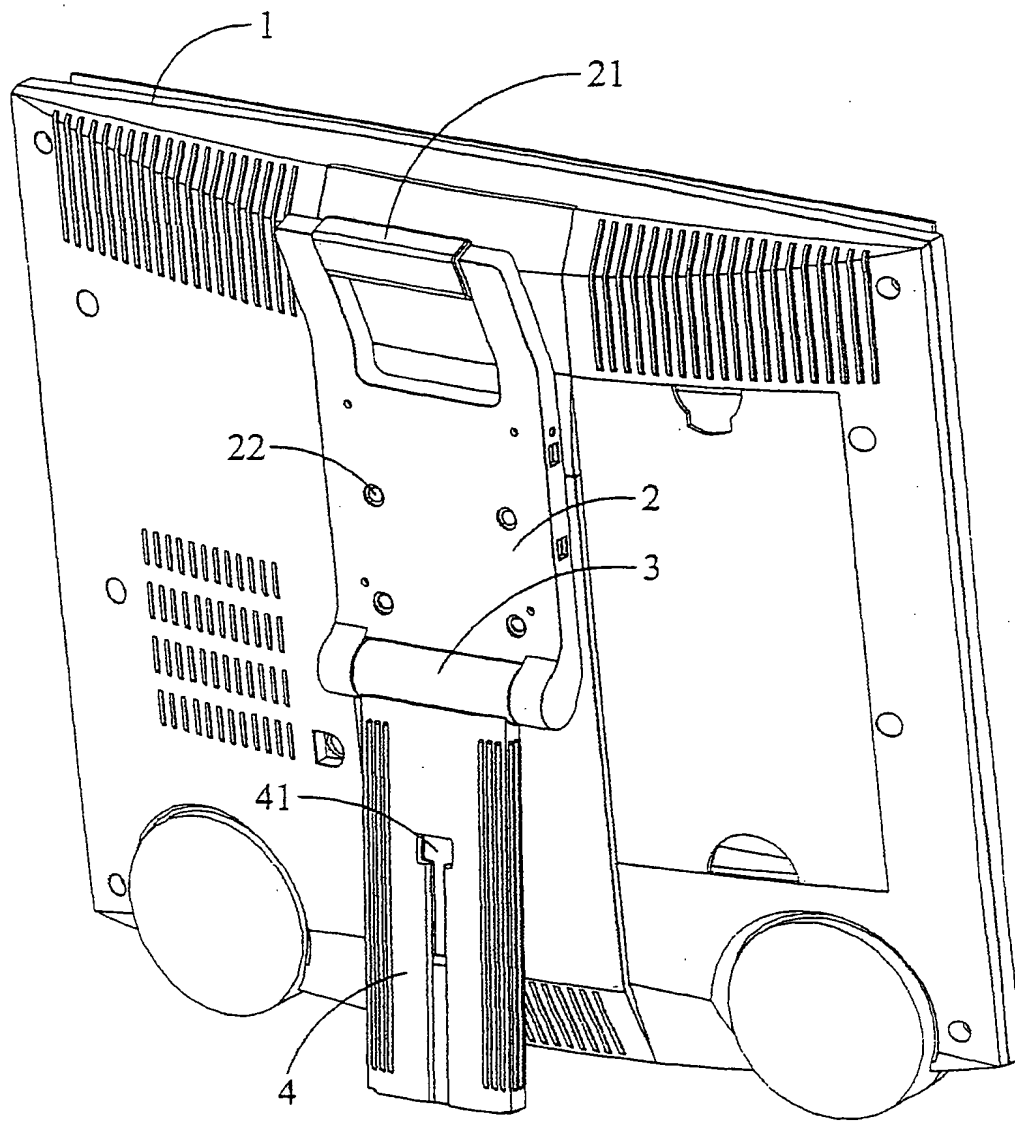


FIG. 2

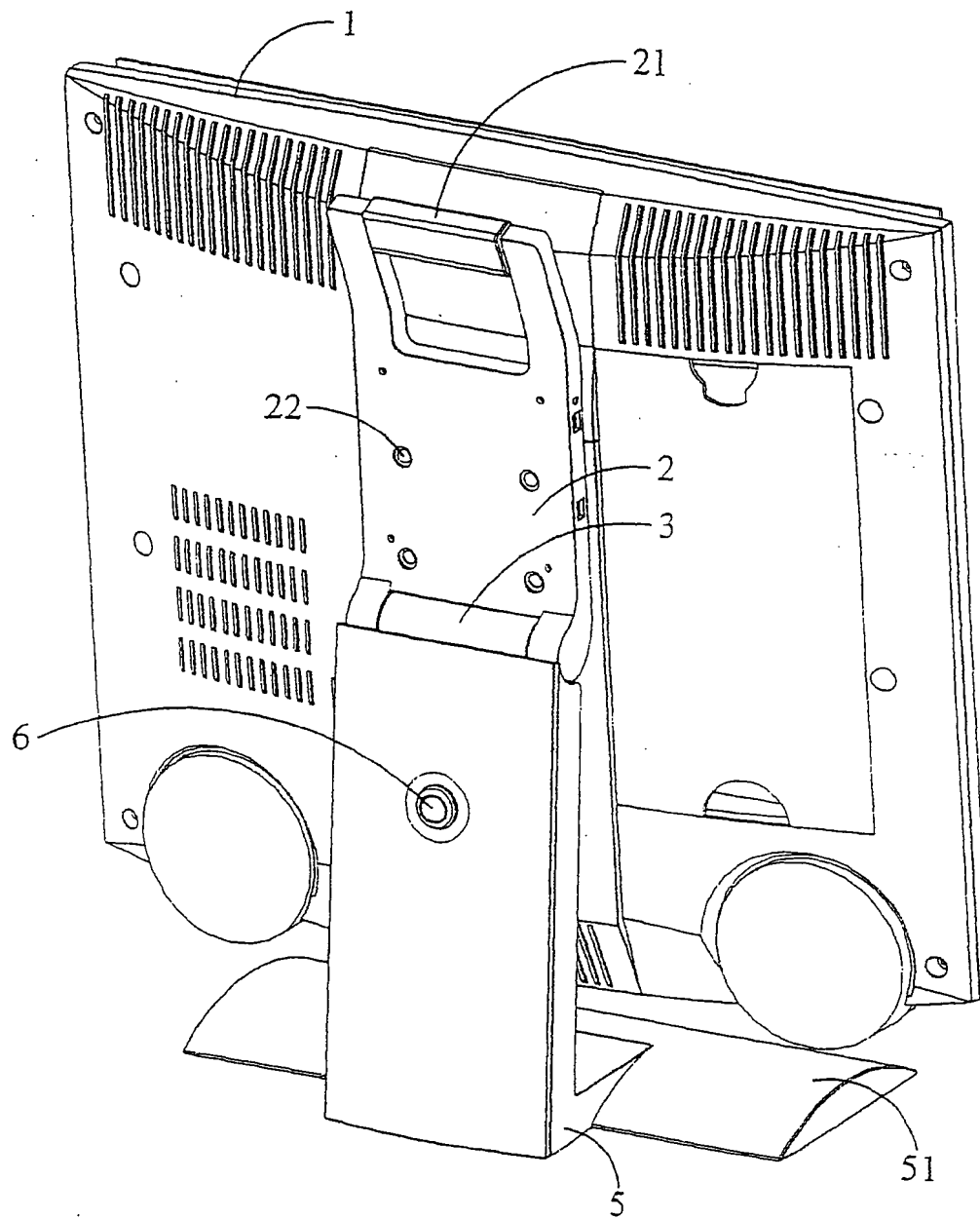


FIG. 3

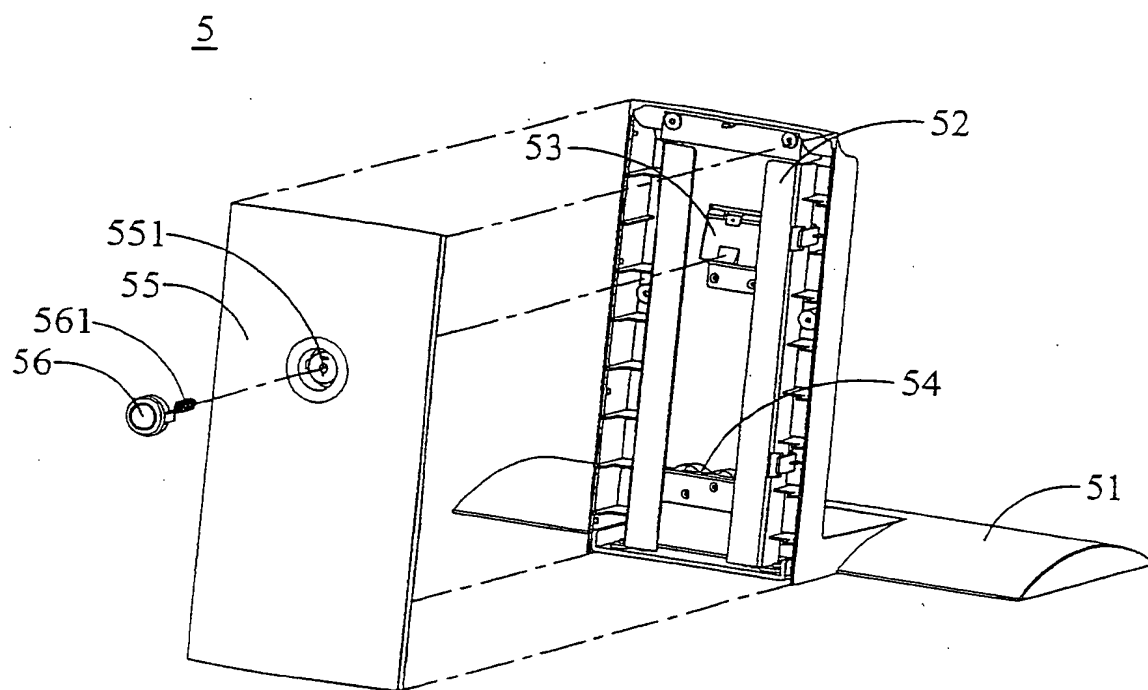


FIG. 4

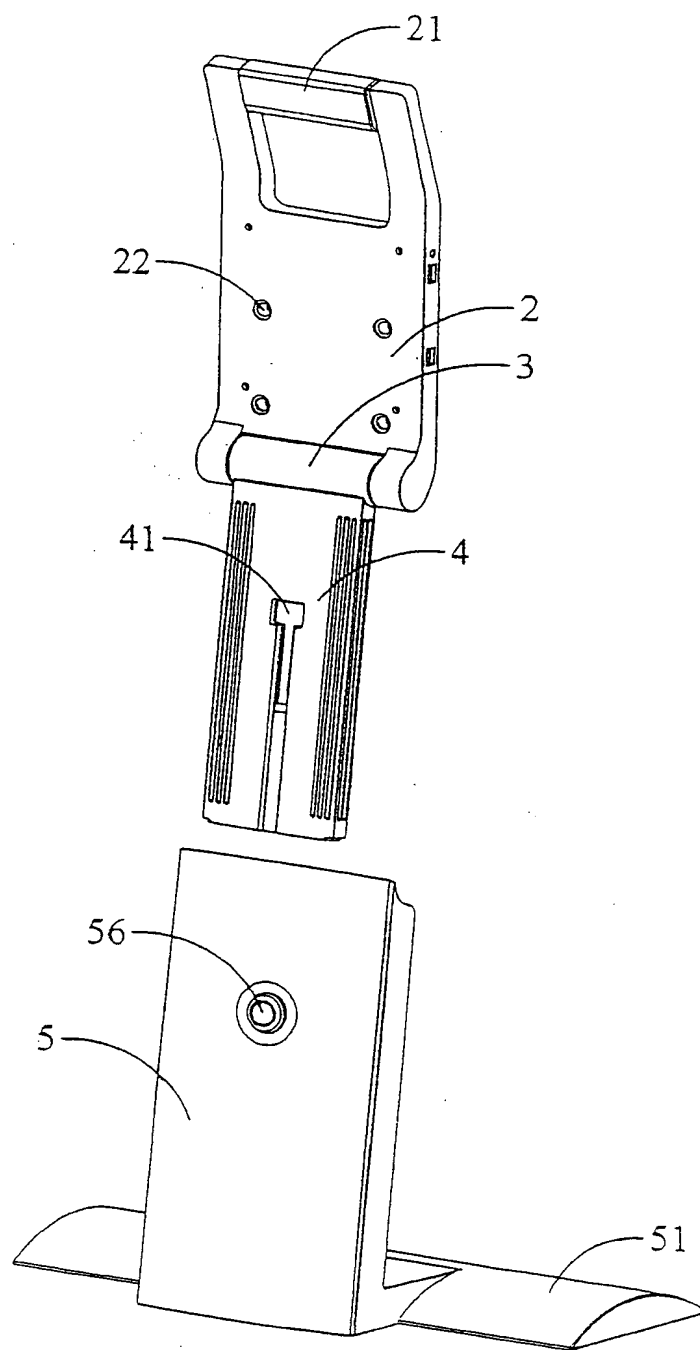


FIG. 5

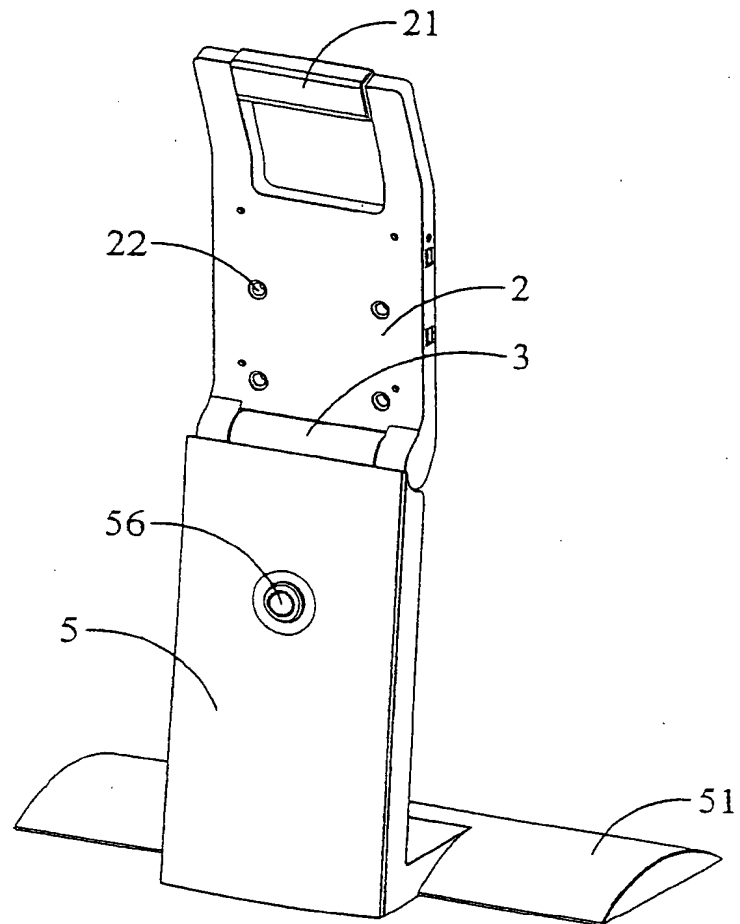


FIG. 6

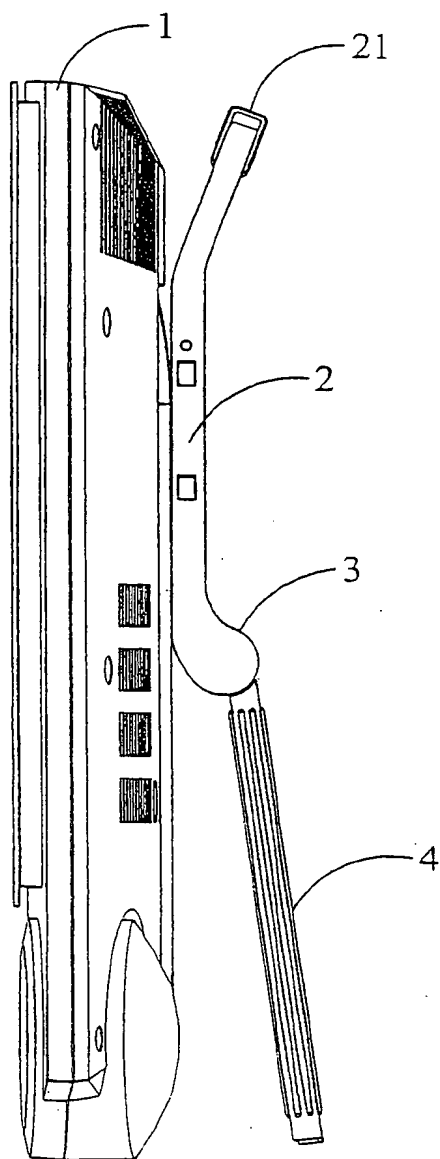


FIG. 7

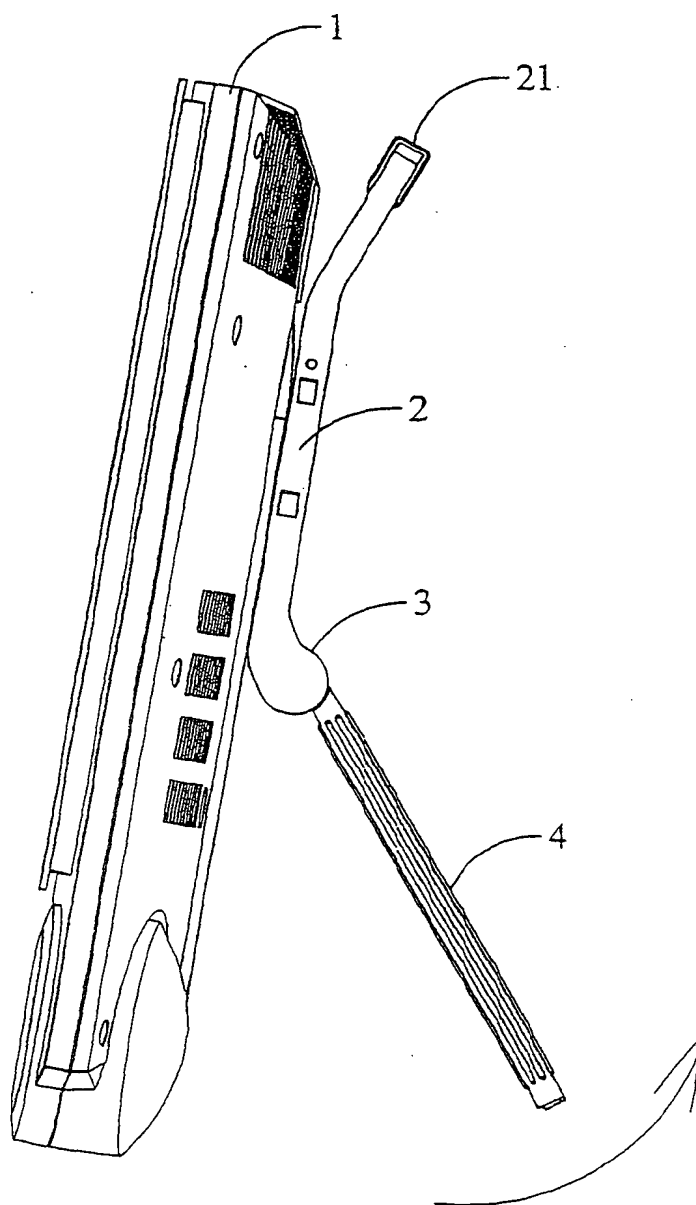


FIG. 8

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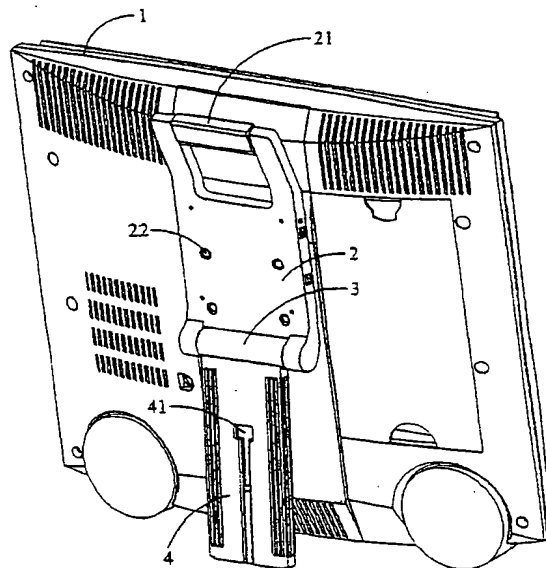


FIG. 2

EP 1 420 202 A3

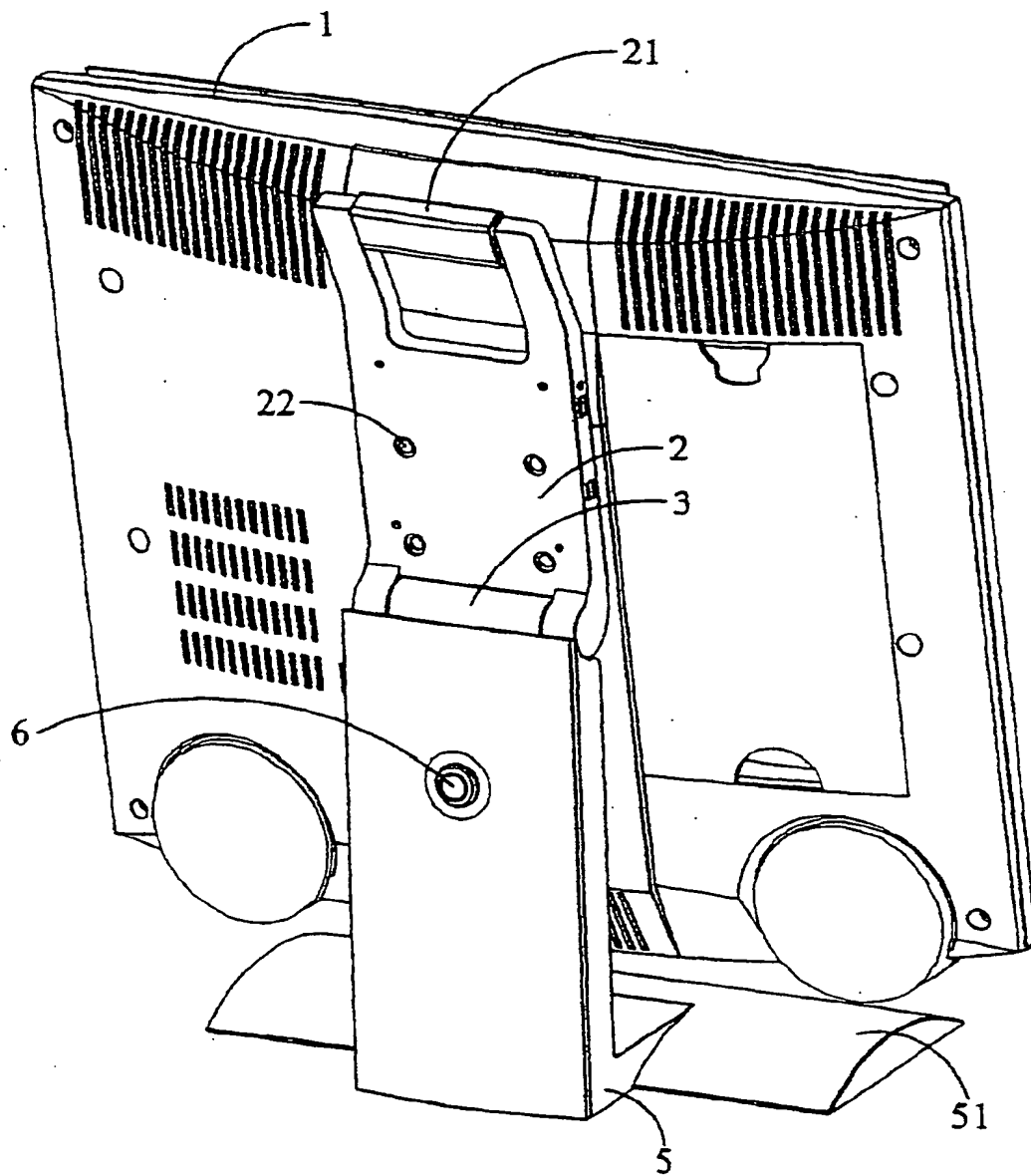


FIG. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 03 01 6376

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IntCl.7)
X	PATENT ABSTRACTS OF JAPAN vol. 017, no. 277 (P-1546), 27 May 1993 (1993-05-27) - & JP 05 011707 A (MATSUSHITA ELECTRIC IND CO LTD), 22 January 1993 (1993-01-22) * abstract; figures 9-11 *	1-3	F16M13/00 F16M11/00 F16M11/10
A	-----	7	
X	US 6 418 010 B1 (SAWYER MICHAEL D) 9 July 2002 (2002-07-09) * column 2, line 61 - column 6, line 17; figures 1-5 *	1-3	
X	US 6 081 420 A (HWANG JIN-SANG ET AL) 27 June 2000 (2000-06-27) * column 3, line 21 - line 27; figures 5,6 *	1-3	
A	US 6 366 452 B1 (MA YUNG-CHUAN ET AL) 2 April 2002 (2002-04-02) * column 2, line 17 - line 22; figures 1-3 *	1,4	
			TECHNICAL FIELDS SEARCHED (IntCl.7)
			F16M G06F G09F H04N
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 16 December 2004	Examiner Baron, C
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 03 01 6376

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 05011707	A	22-01-1993	NONE	
US 6418010	B1	09-07-2002	NONE	
US 6081420	A	27-06-2000	NONE	
US 6366452	B1	02-04-2002	TW 457445 B	01-10-2001
			DE 10101104 A1	30-08-2001
			JP 2001282115 A	12-10-2001

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82